

**IN THE CLAIMS:**

Please amend the claims where indicated below:

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1. (*currently amended*) A vertical cavity surface emitting laser (VCSEL), comprising:  
an active region further comprising at least one quantum well having a ~~well~~ depth of at least 40 meV, wherein said depth is defined as the difference between a valence band offset and a conduction band offset, and said at least one quantum well is comprised of InGaAsSbN and includes barrier layers sandwiching said at least one quantum well; and  
confinement layers sandwiching said active region.
2. (*original*) The VCSEL of claim 1 wherein said barrier layers are comprised of GaAsP.
3. (*original*) The VCSEL of claim 1 wherein said confinement layers are comprised of AlGaAs.
4. (*original*) The VCSEL of claim 2 wherein said confinement layers are comprised of AlGaAs.
5. (*original*) The VCSEL of claim 3 wherein said barrier layers are comprised of AlGaAs.
6. (*original*) The VCSEL of claim 1 wherein said barrier layers are comprised of AlGaAs.
7. (*previously amended*) The VCSEL of claim 1 wherein said at least one quantum well further comprises >1% N.

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8. *(original)* The VCSEL of claim 7 wherein said barrier layers are comprised of GaAsP.

9. *(original)* The VCSEL of claim 7 wherein said confinement layers are comprised of AlGaAs.

10. *(original)* The VCSEL of claim 8 wherein said confinement layers are comprised of AlGaAs.

11. *(original)* The VCSEL of claim 7 wherein said barrier layers are comprised of AlGaAs.

12. *(original)* The VCSEL of claim 9 wherein said barrier layers are comprised of AlGaAs.

13. *(previously amended)* The VCSEL of claim 1 wherein said at least one quantum well is up to and including 50Å in thickness.

14. *(original)* The VCSEL of claim 13 wherein said barrier layers are comprised of GaAsP.

15. *(original)* The VCSEL of claim 13 wherein said confinement layers are comprised of AlGaAs.

16. *(original)* The VCSEL of claim 14 wherein said confinement layers are comprised of AlGaAs.

17. *(original)* The VCSEL of claim 13 wherein said barrier layers are comprised of AlGaAs

18. *(original)* The VCSEL of claim 13 wherein said barrier layers are comprised of AlGaAs.

19. *(previously amended)* The VCSEL of claim 1 wherein said at least one quantum well further comprises  $>1\%$  N.

20. *(original)* The VCSEL of claim 19 wherein said barrier layers are comprised of GaAsP.

21. *(original)* The VCSEL of claim 19 wherein said confinement layers are comprised of AlGaAs.

22. *(original)* The VCSEL of claim 20 wherein said confinement layers are comprised of AlGaAs.

23. *(original)* The VCSEL of claim 19 wherein said barrier layers are comprised of AlGaAs.

24. *(original)* The VCSEL of claim 21 wherein said barrier layers are comprised of AlGaAs.

25. *(currently amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a ~~well~~ depth of at least 40 meV, wherein said depth is defined as the difference between a valence band offset and a conduction band offset, and said at least one quantum well is comprised of InGaAsSbN and includes barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

26. *(previously amended)* The VCSEL of claim 25 wherein said barrier layers are comprised of GaAsP.

27. *(previously amended)* The VCSEL of claim 25 wherein said barrier layers are comprised of AlGaAs.

28. *(previously deleted)*

29. *(previously amended)* The VCSEL of claim 25 wherein said at least one quantum well further comprises  $>1\%$  N.

30. *(previously amended)* The VCSEL of claim 29 wherein said barrier layers are comprised of GaAsP.

31. *(previously amended)* The VCSEL of claim 29 wherein said barrier layers are comprised of AlGaAs.

32. *(original)* The VCSEL of claim 25 wherein said quantum well is up to and including 50 Å in thickness.

33. *(currently amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV, wherein said depth is defined as the difference between a valence band offset and a conduction band offset, and said at least one quantum well is comprised of InGaAsSbN and includes barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region;

wherein said quantum well contains greater than 1% N.

34. (original) The VCSEL of claim 33 wherein said quantum well is up to and including 50 Å in thickness.

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